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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,964	08/06/2001	Paul M. Neugebauer	1110-WO P99125US1A	1450
25944	7590	12/16/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			MAKI, STEVEN D	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,964	NEUGEBAUER ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005 and 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23, 26-30, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23, 26-30, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>121105</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

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- 1) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 2) Claims 20-23, 26-30 and 32-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 32, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the subject matter of the sipes extending "at least mostly across the entire width" of the blocks. The original disclosure supports the sipes having a full or partial width (specification page 4, figure 1, figure 6) instead of the sipes extending "at least mostly across the entire width of the block".

As to claim 30, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the combination of the subject matter of the symmetrical tread blocks having "leading and trailing edges symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire" (claim 32) and "certain of the laterally extending grooves have a

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generally V-shaped configuration" (claim 30). Although the edges of blocks in rows 3 and 4 in figure 6 have leading edges symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire, the edges of the blocks in shoulder rows 2 fail to have leading edges symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire.

3) The disclosure is objected to because of the following informalities: On line 13 of the amendment for the paragraph beginning on page 5, "the leading and trailing edges" should be --the leading and trailing sidewalls-- since although figures 2-5 and 9 show the sidewalls as being symmetrical with respect to the radial plane, the symmetry of the edges (defined by the intersection of the sidewall and the block surface) cannot be determined from figures 3-5.

Appropriate correction is required.

4) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5) Claims 20-23, 26-30 and 32-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 32, the scope and meaning of "each rib containing a plurality of symmetrical tread blocks separated by laterally extending groves, said tread blocks having leading and trailing edges symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire" (claim

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32, emphasis added) is ambiguous. In particular, it is unclear if this language *reads on or excludes* blocks having both sidewalls inclined with respect to the radial plane as shown for example by Japan 706 in figure 3. It is unclear if this language *reads on or excludes* blocks separated by V shaped grooves as shown in figure 6 of applicant's disclosure.

In claim 32, the description of the various tires introduces circular subject matter and is thereby confusing. Furthermore, the varying and forming steps are indefinite. Examples: It is unclear what is being varied. Is the angle of inclination of the sipe with respect to the radial plane or something else being varied? Is the sipe inclined at 2-15 degrees being varied or is this sipe the result of the varying? The relationship between the various tires is unclear. Since antecedent basis for "said tire" on line 5 is found in the preamble, is the tire at line 5 the same as the manufactured tire or is it the tire which is varied so as to obtain information for manufacturing the tire (the tire of the forming step)? It is unclear if "the pneumatic tire" at line 27 (last line) of claim 32 is the tire as described at lines 3-8 having the desired residual aligning torque but not the angled sipes as described at lines 9-18.

In claim 32, the scope and meaning of "at least mostly" is unclear, it being noted that the original disclosure provides no guidance as to what constitutes "mostly" and what does not constitutes "mostly".

As to claim 30, it is unclear if the limitation of the laterally extending grooves having a generally V-shaped configuration in claim 30 removes the requirement of the "symmetrical" subject matter of claim 32.

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6) Claim 30 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 30 broadens claim 32 since leading and trailing edges symmetrical with respect to a first radial plane as in claim 32 are not possible with generally V-shaped laterally grooves.

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8) **Claims 21, 23, 27-29, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Japan '706 (JP 4-100706).**

Japan '706 discloses a pneumatic radial tire having a tread and a belt. The tread comprises a center block row, intermediate block rows 22b, 22d and shoulder block rows 22a, 22e. Japan '706 teaches countering the self aligning torque produced by uppermost belt cords of the belt layer by inclining the blocks with respect to the tread normal T. In particular, Japan '706 teaches inclining the straight line L and the straight line M to form sloped blocks such that transverse grooves 20 in block rows 21a, 21b are inclined at a first angle of 5-30 degrees with respect to the tread normal and the transverse grooves 20 in the other block rows 21d, 21e are inclined at a second angle with respect to the tread normal wherein the second angle is equal to the first angle but

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in an opposite direction of the first angle. Japan '706 states "In addition, sipes 28 are formed on the blocks 21 and these sipes 28 extend in a parallel manner to the lines L and M." (This information was obtained during a partial oral translation of page 36 left column lines 18-20 of Japan '706). The sipes therefore are inclined at a first angle of 5-30 degrees with respect to the normal T on one side of the tire and inclined in an opposite direction at angle of 5-30 degrees with respect to the normal T on the other side of the tire. As illustrated in figures 3 and 4, the sipes 28 have a depth generally about 50% of the block height.

The claimed method is anticipated by the Japan '706's method of forming a tire including inclining lateral grooves 20 and sipes 28 so as to counter the self aligning torque produced by uppermost belt cords of the belt layer. The varying and forming steps are inherent in Japan 706's method of forming a tire. See Japan 706's discussion of the range 5-30 degrees at the top of page 36 1/2 of the translation of Japan 706.

With respect to "symmetrical", note (1) the 112 second paragraph rejection in this office action and (2) figure 1 of Japan 706, which illustrates the leading and trailing edges of the blocks as having the same shape.

9) Claims 20-23, 27-29 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '706 (JP 4-100706) in view of Ishiyama (WO 98/29270) and optionally in view of Kajikawa et al (US 5031680), Kishimoto et al (US 6000450) or Aoki et al(US 5431208).

US 6531012 is an English language equivalent to WO 98/29270, which is available as prior art under 35 USC 102(b).

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Japan '706, directed to using an angle G with respect to a radial plane to obtain a desired RAT, is considered to anticipate claim 1. In any event: As to the claim 32, it would have been obvious to one of ordinary skill in the art to perform the varying step and the forming step as set forth in claim 32 since: (1) Japan 706 teaches (a) inclining lines L of blocks on one side of the tire at an intersection angle G (design variable) such that the sidewalls and sipes are parallel to the inclined line L, (b) inclining lines M of blocks on the other side of the tire at an intersection angle G (design variable) and in the opposite direction of line L such that the sidewalls and sipes are parallel to the inclined line M, and (c) **using a value of the angle G with respect to a radial plane in the range of 5-30 degrees** while maintaining the tread pattern as viewed for example in figure 1 (constraint condition) so that the blocks can deform and generate a torque offsetting the torque induced by the outermost belt ply cords of the tire (objective function) and (2) Ishiyama, also directed to the tire art, suggests *optimizing an objective function representing a physical amount for evaluating performance of a pneumatic tire* by a process including varying a **design variable such as angle of wall surface, angle of sipe** (col. 18 lines 31-43), using a constraint condition and designing and forming a tire on the basis of the optimal value of the design variable.

As to the angle being 2-15 degrees, Japan 706 teaches an angle G of 5-30 degrees.

As to "at least mostly", Japan 706 teaches extending the sipes across the entire width of the block.

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As to "symmetrical", the *edges* of Japan 706's blocks have the *same shape*. In any event: it would have been obvious to one of ordinary skill in the art to provide Japan 706's "edges" formed by the intersection of the sidewall of the block and the ground contacting surface of the block such that Japan 706's leading and trailing "edges" are "symmetrical" since it is well known in the tire tread art to orient leading and trailing "edges" of blocks parallel to the axis of rotation of the tire as evidenced by Kajikawa et al (figure 1), Kishimoto et al (figure 2), or Aoki et al (figure 3, figures 9a-9d).

As to claim 20, the claimed angle of 7 degrees would have been obvious in view of Japan '706's teaching to use an angle G of 5-30 degrees to counter self aligning torque.

As to claim 21, the claimed depth of 20-100% of tread block height would have been obvious in view since Japan '706 suggests using sipes 28 having a depth generally about 50% of the tread block height as illustrated in figures 3 and 4.

As to claim 22, note Japan 706's teaching to orient sipes parallel to the edges of the blocks and Kajikawa et al (figure 1), Kishimoto et al (figure 2), or Aoki et al (figure 3, figures 9a-9d) suggestion to orient "edges" of blocks of a tire tread such that they are parallel to the axis of rotation.

As to claim 23, Japan 706's sipes are inclined at an angle to the mid-circumferential plane of the tire. See figure 1. In any event, note Kajikawa et al (figure 1), Kishimoto et al (figure 2), or Aoki et al (figure 3, figures 9a-9d) suggestion to orient "edges" of blocks of a tire tread such that they are parallel to the axis of rotation.

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With respect to claims 27 and 28, Japan '706 teaches inclining the transverse grooves 20 and sipes 28 in block rows 21a, 21b at a first angle with respect to the tread normal and inclining the transverse grooves 20 and sipes 28 in the other block rows 21d, 21e at a second angle with respect to the tread normal wherein the second angle is equal to the first angle but in an opposite direction of the first angle.

As to claim 29, Japan 706's sipes extend across the entire width of the block.

With respect to claim 33, Japan '706 teaches inclining the transverse grooves 20 and sipes 28 in block rows 21a, 21b at a first angle with respect to the tread normal and inclining the transverse grooves 20 and sipes 28 in the other block rows 21d, 21e at a second angle with respect to the tread normal wherein the second angle is equal to the first angle but in an opposite direction of the first angle.

10) Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '706 in view of Ishiyama and optionally in view of Kajikawa et al, Kishimoto et al or Aoki et al as applied above and further in view of Flechtner (US 4598747) or Herbelleau et al (US 4298046).

As to the claim 26, it would have been obvious to provide the sipes as zig-zag sipes since it is well known / conventional in the tire art to use zigzag sipes instead of straight sipes to increase the effective length of the sipes and thereby improve traction as evidenced by Flechtner or Herbelleau et al.

11) Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '706 in view of Ishiyama and optionally in view of Kajikawa et al, Kishimoto

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et al or Aoki et al as applied above and further in view of van der Meer et al (US 5538060)

As to claim 30, it would have been obvious to one of ordinary skill in the art to provide Japan 706's tire with the claimed "generally V-shaped configuration" in view of van der Meer et al's suggestion to use V-shaped grooves between shoulder blocks in order to improve traction for off road use.

Allowable Subject Matter

12) Claims 20-23, 26-30 and 32-33 would be allowable if (1) rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112 set forth in this Office action and (2) "edges" is changed to --sidewalls--.

The 112 rejections may be overcome by adopting the proposal set forth in the interview summary attachment for the Interview Summary dated 12-2-05.

The following remarks are provided primarily for emphasis:

Japan 706 discloses offsetting residual aligning torque by inclining lines L and M at an angle G. See figures 3-6. The sidewalls of the block in each of figures 3-6 of Japan 706 fail to have "leading and trailing sidewalls symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire". Although Japan 706 teaches inclining sipes 28 *along with* inclining the sidewalls of the blocks (figure 3 and 4), there is no motivation to modify Japan 706 so as to arrive at a method of manufacturing a tire comprising forming a pneumatic tire having the claimed angled sipes at the claimed constant sipe angle of inclination wherein the angled sipes are obtained by varying the angle of inclination with respect to

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the radial plane of the sipes of a tread pattern comprising blocks having "leading and trailing sidewalls symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire".

Herbelleau et al discloses sipes inclined in different block rows in different directions (figure 6). As noted on page 9 of the office action dated 4-19-05, one of ordinary skill in the art would readily understand that the walls of each block of Herbelleau et al are symmetrical. However, Herbelleau et al fails to teach a tire designing method in which RAT is changed by changing sipe angle with respect to the radial direction of sipes in blocks having "leading and trailing sidewalls symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire".

The remaining references of record including Europe 1020306, Japan 10-138715, Japan 11-240314, US 5714026 and US 5944082 lead one of ordinary skill in the art in various divergent directions away from the method as in proposed claim 32 and fail to motivate one of ordinary skill in the art whether taken alone or in combination to arrive at a method of manufacturing a tire comprising forming a pneumatic tire having the claimed angled sipes at the claimed constant sipe angle of inclination wherein the angled sipes are obtained by varying the angle of inclination with respect to the radial plane of the sipes of a tread pattern comprising blocks having "leading and trailing sidewalls symmetrical with respect to a first radial plane passing through a midpoint of said tread blocks and through an axis of rotation of the tire".

Remarks

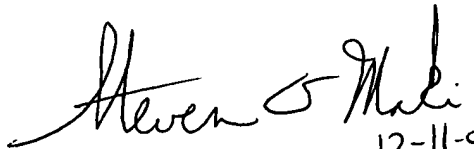
13) Applicant's arguments with respect to claims 20-23, 26-30 and 32-33 have been considered but are moot in view of the new ground(s) of rejection. This action is non-final since the new 112 rejections reading "symmetrical" and "edges" were not necessitated by amendment.

14) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
December 12, 2005


STEVEN D. MAKI
PRIMARY EXAMINER
12-11-05